

NOTES ON A RARE LORICATE, *RHYSSOPLAX*
EXCELLENS IREDALE AND HULL.

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Plate XVI.

Family **CHITONIDAE** Pilsbry 1892.

Genus **RHYSSOPLAX** Thiele 1893.

Rhyssoplax excellens Iredale and Hull.

1877. *Chiton pulcherrimus* Sowerby. Brazier, Proc. Linn. Soc. N.S.W., ii, 1877, 75. Darnley Island, Torres Strait. Type in Macleay Museum, Sydney. Not *C. pulcherrimus* Sowerby, P.Z.S., 1841, 103, from Island of Bohol, Philippine Group, in Mus. Cuming.
1926. *Rhyssoplax excellens* Iredale and Hull, Aust. Zool., iv, 1926, 181, pl. xix, f. 22, 27, 40. Darnley Island, Torres Strait. Type in Macleay Museum, Sydney.
1928. *Chiton (Rhyssoplax) excellens capricornensis* Ashby, Trans. Roy. Soc. S. Aust., vol. 53, 1928, p. 169, pl. 12, f. 1, 13. Capricorn Reef, Queensland. Type in coll. Ashby.

Historical note.—Early in 1875 the Chevert Expedition under the direction of Sir William Macleay left for North Queensland and New Guinea. They called at various points of the two mainlands and visited numerous islands off the Queensland coast and in Torres Strait. After an absence of five months they returned with extensive zoological and botanical collections. Among the islands visited was Darnley Island off the coast of New Guinea and here was taken a solitary example of a Loricata believed to be *Chiton pulcherrimus* Sowerby, a Philippine shell. It was so named by J. Brazier at a meeting of the newly formed Linnean Society of New South Wales of which Sir William Macleay was the first President.

Nearly fifty years later the Darnley Island shell was sent to Iredale at the British Museum for comparison with the type of *C. pulcherrimus* Sowerby. It was found to differ in certain details and in 1926 Iredale and Hull published it in their Monograph of the Australian Loricatae as *Rhyssoplax excellens* (supra).

As only one shell 22 mm. in length was available and as details of exact locality, station, habits, etc., were unknown, the description was necessarily incomplete.

In 1928 Edwin Ashby published a short account of a shell received from the Capricorn Reef, where it had been collected by W. J. Kimber. Ashby recognised the close relationship of this specimen to the rare *R. excellens*, but, believing the Capricorn shell to differ subspecifically, he published it as *Chiton (Rhyssoplax) excellens capricornensis* (supra).

Until recently these two specimens from widely divergent localities nearly 800 miles apart were the only ones known.

In August 1931 the present writer took advantage of the exceptionally low new moon tide to examine the littoral on the south side of Magnetic Island, North Queensland. Close to the jetty at Nellie Bay are some piles of granite fragments, evidently debris from the road which has here been blasted from the solid rock. The granite is fine-grained and tends to fracture with a smooth surface. The fragments of rock lay in piles extending below the lowest tide level and had become somewhat cemented together at the edges by coralline debris. Over an area of about nine feet square a colony of nine individuals of *Rhyssoplax excellens* was found.

This fine series permits some expansion of the original description.

General Appearance.—Elongate ovals of medium size, strongly elevated, carinate, of complex sculpture.

Colour.—Variable.

1. Type. Darnley Island. "Creamy brown, the girdle with darker banding."

2. Ashby's specimen from Capricorn Reef. "Creamy white, with bright red blotches on six of the valves."

3. Magnetic Island specimens. *a.* Creamy brown, jugal areas touched with darker brown; girdle banded cream and brown. *b.* Cream, umbones of valves 2, 4, 5 and 6 and lateral portions of pleural areas of valves 2 to 8 maroon; girdle banded cream and reddish brown. *c.* Yellow; umbones and lateral areas tinted green; girdle banded yellow and green.

Anterior Valve.—Strongly erect, conspicuous from other valves. Sculpture consists of 20 to 25 radiating strongly nodulose ridges in adult shells; juveniles show a smaller number of ridges, but in between may be seen all stages from a single nodule up to the fully developed ridge. Apical tip smooth and polished. Posterior margins show from 11 to 20 serrations on each side; this feature, which is beautifully shown in young specimens, may, from erosion, be less apparent in adults.

Median Valves.—Second valve larger than the others. Lateral areas strongly elevated with usually three (rarely four) bold, nodulose ribs; when four ribs occur, it is usually on the second valve. Juveniles may show two strong ribs and a weak one between. Posterior margins strongly toothed as in the anterior valve. Pleural areas crossed by 12 to 16 strong longitudinal ridges with deep interstices at lateral margins; they become shallow and

irregular towards the jugal area which is narrow, smooth and beaked. Interstices between longitudinal ridges are further divided by laterals producing a complex gridiron pattern; bottoms of pits thus produced are finely granular. In older shells erosion and the invasion of parasitic growths tend to obscure the finer details of sculpture.

Posterior Valve.—Mucro median, sharply angulated; a well defined transverse ridge traverses the mucro and separates the antemucronal and postmucronal areas. Postmucronal area concave, sculptured with 15 to 20 radiating, boldly nodulose ribs. Jugal portion of antemucronal area narrow, smooth; lateral portion sculptured in same manner as pleural area of median valves.

Girdle.—Of medium width; composed of oval scales which, in common with those of many Loricates, are larger in the area midway between valves and girdle margins. Scales marked with about eight deep regular grooves which terminate, leaving apex smooth, rounded and polished.

Interior Colour.—Tail valve green. Remainder green to greenish-yellow or white.

Slitting.—Head valve, 8 to 10 slits: median valves, single slit each side: tail valve, 11 to 14 slits. The usual formula for the genus is 8—1—10 or more. Two of the Magnetic Island shells showed ten slits in the head valve; three had nine slits. Of the series of nine, four only complied with the usual formula and one of these four is in doubt. Appearances indicate that the normal eight-slit pattern is present, with the additional slits and slit-rays interposed.

Sutural Laminae.—Rather small, semilunar, widely separated by a deep sinus at bottom of which may be seen a narrow coarsely serrated bridge of articulation uniting sutural laminae.

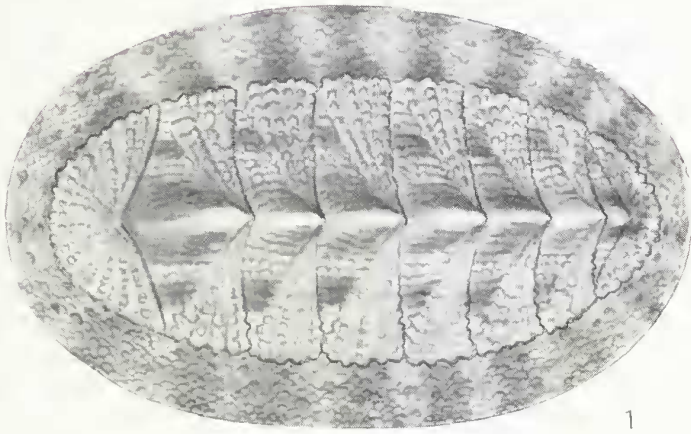
Dimensions.—28 x 19 mm. (max.). Others 27, 26, 25, 21, 17, and 15 mm. in length.

Station.—On sides and under surface (rarely upper surface) of fairly large stones cemented together by edges and corners below usual tide level, but wholly emergent at lowest spring tides (e.g.—4 tide).

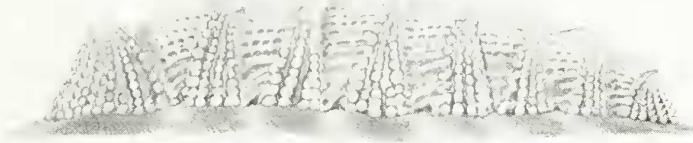
Range.—North Queensland Coast from Torres Strait to Capricorn Reef.

Remarks.—They appear to be sedentary in habit and solitary in disposition. They were found singly, and when exposed did not move about. Adult shells were encrusted with calcareous and spongy growths and in two instances the tegmentum was pierced by a boring parasite without killing the host. The extraneous matter together with a fine coating of mud made them inconspicuous. Shells from the cleaner waters of Torres Strait or the Capricorn Reef would be less likely to be attacked by parasites.

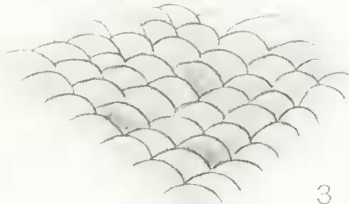
One specimen, 17 mm. in length, which showed the sculpture particularly well was sent to the Australian Museum for figuring and comparison with the type shell from Darnley Island. Iredale, who made the comparison, considers that they are undoubtedly the same species.



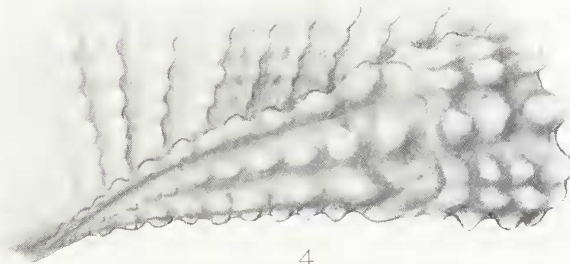
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Rhyssoplax excellens Fredale and Hull

Acknowledgments.—The writer here expresses his obligation to Mr. Tom Iredale, Conchologist, Australian Museum, for a most helpful criticism of manuscript and for comparisons of a Magnetic Island shell with the type from Darnley Island. He is also indebted to Miss Joyce K. Allan, of the Australian Museum, for three beautiful figures.

Plate XVI.

Rhyssoplax excellens Iredale and Hull.

Fig. 1. Whole shell seen from above. $\times 5$ approx.

Fig. 2. Whole shell, side view. $\times 5$ approx.

Fig. 3. Girdle scales. $\times 17$ approx.

Fig. 4. Half median valve. $\times 24$ approx.

(Figs. 1, 3 and 4 by Miss Joyce K. Allan ; fig. 2 by the writer.)

All figures were drawn from shell No. 3161 in the writer's collection, which is in the care of the National Museum.